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ABSTRACT

In the last four years, University Extension, the University of Wisconsin, has developed two new communications, the Educational Telephone Network (ETN) and Subsidiary Communications Authorization (SCA). ETN is an interacting, party-line type connection which links instructors with remote classrooms in courthouses, hospitals, and universities. SCA is an electronic technique which allows a second signal to be broadcast on an FM channel and received only by individuals with the appropriate multiplexing receiving equipment. Both systems have been used to deliver educational programing with a typical format consisting of lecture sessions followed by question and answer sessions. Each can be used to provide broad dissemination of community service messages. (EMH)

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THE DEVELOPMENT OF THE EDUCATIONAL TELEPHONE NETWORK (ETN) AND THE SUBSIDIARY COMMUNICATIONS AUTHORIZATION (SCA) SYSTEMS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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Lorne A. Parker

In the last four years, University Extension, The University of Wisconsin, has developed two new communications systems, the Educational Telephone Network (ETN) and Subsidiary Communications Authorization (SCA).

ETN is a private telephone network and takes the form of the old-fashioned rural telephone service with a number of parties on the same line: the ETN system is a huge party line linking 50 courthouses, 15 University of Wisconsin campuses and centers, and 56 hospitals in the state. All the outlying points on the network have identical equipment consisting of a loudspeaker and a telephone handset. By picking up the handset, a participant can talk to all listening points connected to the ETN system.

Subsidiary Communications Authorization (SCA)

SCA is an electronic technique that places two or more separate signals onto the single channel assigned to an FM station. Thus, multiplexing permits an FM station to send out several signals simultaneously. SCA is the name given to a specific electronic function on the FM channel. In essence, an additional signal is transmitted on top of the FM signals emanating from WHA-FM Radio in Madison. The regular FM station must be operating in order to send the SCA signal. In 1955 the Federal Communications Commission (FCC) modified its FM rules by passing the SCA in order to help FM stations financially and to make more efficient use of FM frequencies. This authorization permitted commercial FM stations to use FM multiplexing techniques for the transmission of additional audio program material, which can

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be received only by individuals and organizations having the necessary SCA multiplexing receiving equipment. In turn the commercial FM stations programmed background music on the SCA signal and sold this music to restaurants, grocery stores, office buildings, etc. This service enabled many FM stations to survive during the 1950's and early 1960's.

Because educational broadcasters had not indicated a real desire or need for supplemental audio programming services, they were specifically excluded from the multiplexing of audio channels, such as those provided by the 1955 SCA regulations. However, during 1960 it was proven satisfactorily to the FCC that there was a growing need by educational broadcasters to use the auxiliary services provided by multiplexed SCA channels. In February 1961 the FCC authorized SCA operations by educational FM stations in a manner compatible with the noncommercial status of these stations. Although educational stations have been authorized to transmit an SCA signal since 1961, it was not until 1966 that WHA, "the oldest station in the nation," was the first to transmit an SCA signal on a regular basis. Most of the ETN-SCA programs originate from Radio Hall and are an integral part of WHA's broadcast service.

Educational Telephone Network (ETN)

ETN was developed to meet a need for continuing education to medical doctors throughout the state: the first Postgraduate Medical program was conducted via ETN in November 1965. In 1967, ETN was not only expanded in the number of locations but in the diversifications of its programs, which started with Chancellor Donald McNeil's University Extension faculty meeting via ETN in January. Programs now range from the original medical conferences to law, pharmacy, staff training and development, social work, library science, nursing, 4H, engineering, and music. By the end of 1967 ETN had grown from

a struggling infant to a demanding teenager. That year also marked the first offering of college credit courses via ETN-SCA. Such courses include home economics, library science, veterinary science, physics, sociology, and English.

GROWTH OF EDUCATIONAL TELEPHONE NETWORK

Year	No. of Participants	Listening Stations			No. of Programs
1965	190	13 hospitals and clinics			1
1966	12,000	48 hospitals and clinics	19 courthouses	11 UW Centers	147
1967	41,000	55 hospitals and clinics	46 courthouses	11 UW Centers	481
1968	80,000 (projected)	56 hospitals and clinics	50 courthouses	15 UW Centers	982

From the original medical conference in 1965, the areas represented now range from Law, Social Work, English, 4H, Agriculture, Home Economics, Staff Training and Development, and Library Science to Music, Engineering, and Veterinary Science.

A Typical Program

A typical program on ETN-SCA varies from one to two hours, with the format changing for each clientele group, but a normal program consists of a lecture session followed by a question-and-answer period. ETN-SCA provides content flexibility in that an authority in a specific area can be 1,000 miles away and by simply placing a long-distance call, he can lecture and respond to all ETN-SCA locations. To ask a question from a listening location, a participant simply lifts the telephone handset and asks the question, which is heard over the entire ETN-SCA system.

Visual materials are sent out to each listening station, usually in the form of slides, which are projected on a screen in conjunction with the lecture. Other visuals that are used are programmed notebooks, film strips, printed materials, and transparencies.

Educational Use of SCA

SCA transmissions started on a regular basis on WHA-FM in the summer of 1966 with a French language program received by Lincoln High School, Wisconsin Rapids, for the '66-'67 term. This was the result of University Extension foresight in allocating monies for the purchase of SCA equipment for WHA-FM and eight state network stations. In one year ('67-'68) the number of SCA receivers grew from two to 80. Now many educational programs, both credit and noncredit, are transmitted simultaneously on ETN and SCA. This is done to obtain maximum coverage for the programs.

The ETN and SCA systems have many similarities: they have been used a great deal for simultaneous transmissions and are both non-broadcast, point-to-point communications. But each system has its advantages. The telephone network has an intimate psychological base with immediate question-and-answer possibilities; it is designed for maximum flexibility and practical approximation to across-the-table discussion, whereas SCA is a one-way communications tool that does not possess immediate question-and-answer potential. To ask a question on SCA, a listener places a long-distance call to the SCA studio and then the call is transmitted over the entire SCA network. Programs are designed to take advantage of the assets of each system.

Utilizations of ETN-SCA

It is anticipated that perhaps SCA could provide an informational service throughout the state, sent from WHA Radio Hall to County Agents, commercial radio stations, etc. This could be designed for such programs as the Extension

English department reviewing books and periodicals on a regular basis and could be programmed so that commercial radio stations could offer it as public service announcements during the commercial schedule.

Agricultural information would be pertinent to state listeners. There is now an experimental monthly SCA program on gardening tips. These transmissions are tape-recorded from SCA receivers by County Agents, who then take the tapes to local commercial radio stations for playback during the particular month for which the tips are intended. Historical information from the State Historical Society, a direct news link to all commercial stations via SCA from the University News Service, and other transmissions along these lines can be adopted to provide an informational service for the entire state.

As is readily apparent, the surface has barely been scratched in the development of the two systems. Three years ago, ETN and SCA were new words for most people in education. It is possible that computers, slow-scan television, the picture-phone, and multiplexed telephone systems will be as common in the next few years as ETN and SCA are today. These kinds of services would certainly extend the boundaries of University Extension.